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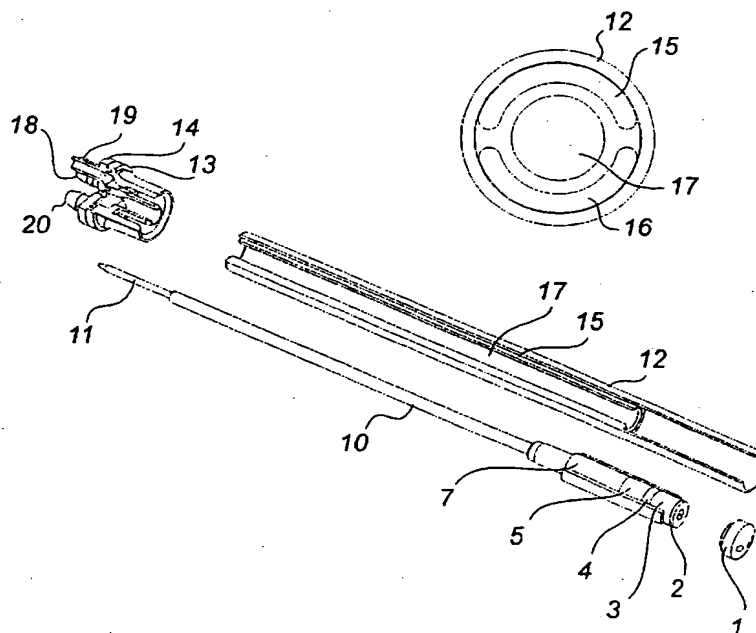
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— as to the identity of the inventor (Rule 4.17(i)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR.

[Continued on next page]

(54) Title: **PLASMA SURGICAL DEVICE**



(57) Abstract: A plasma surgical device for reducing bleeding in live tissue by means of a gas plasma. The device comprises a plasma-generating system having an anode (1), a cathode (8) and a gas supply channel (17) for supplying gas to the plasma-generating system, the plasma-generating system comprising at least one electrode (3, 5), which is arranged between said cathode (8) and said anode (1), and the plasma-generating system being enclosed by a housing (12) of an electrically conductive material, which is connected to the anode (1). The device is characterised in that said housing (12) forms said gas supply channel (17).

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HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3434476 A (R.F. SHAW ET AL), 25 March 1969 (25.03.69), abstract, fig. --	1-27
A	WO 9606572 A1 (NIKVAL INTERNATIONAL AB), 7 March 1996 (07.03.96), abstract, fig. --	1-27
A	US 3858072 A (VLADIMIR DEMBOVSKY), 31 December 1974 (31.12.74), abstract, fig. --	1-27
A	US 6475215 B1 (NAIM ERTURK TANRISEVER), 5 November 2002 (05.11.02), abstract, fig. --	1-27

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3938525 A (ROBERT G. COUCHER), 17 February 1976 (17.02.76), abstract, fig. ---	1-27
A	US 5320621 A (MARK G. GORDON ET AL), 14 June 1994 (14.06.94), abstract, fig. -- -----	1-27

INTERNATIONAL SEARCH REPORT

Information on patent family members

06/09/03

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Patent document cited in search report			Publication date	Patent family member(s)	Publication date
US	3434476	A	25/03/69	NONE	
WO	9606572	A1	07/03/96	AU 7865794 A SE 503334 C SE 9301850 A EP 0784452 A,B JP 10504751 T US 5843079 A	22/03/96 28/05/96 02/12/94 23/07/97 12/05/98 01/12/98
US	3858072	A	31/12/74	BE 795236 A CH 550528 A CS 163895 B DD 101585 A DE 2306022 A,B,C FR 2171418 A,B GB 1416783 A JP 48089149 A SE 378998 B,C	29/05/73 14/06/74 07/11/75 12/11/73 23/08/73 21/09/73 10/12/75 21/11/73 22/09/75
US	6475215	B1	05/11/02	AU 2397202 A CA 2425257 A EP 1330200 A US 2003069576 A WO 0230308 A	22/04/02 18/04/02 30/07/03 10/04/03 18/04/02
US	3938525	A	17/02/76	NONE	
US	5320621	A	14/06/94	NONE	